

## MGH Pathology Experts Forge New Mode of Diagnosis

To help physicians improve diagnostic speed and accuracy, Massachusetts General Hospital pathology experts are essentially teaching computers to mine all the information gathered on each patient and make recommendations about that patient's care.

Roughly 70 percent of all hospital decisions about diagnosis and patient care are based on pathology lab tests, estimates Mass General's Chief of Pathology David Louis, MD. Tests on blood, urine and tissues reveal telltale markers of health and disease. But hidden in the huge haystacks of information generated, he says, "are vast amounts of untapped information." Mass General pathologists coined the use of the term "computational



Mass General pathologists Jason Baron, MD (left), and Anand Dighe, MD, PhD, have received an MGH-MIT Challenge Grant to harness the power of computers to aid in making decisions about patient care.

pathology" to describe their efforts at developing computer models and algorithms—formulas and coding for solving problems—to mine data and make clinical recommendations.

To read more, visit [www.massgeneralmag.org/pathology-mode](http://www.massgeneralmag.org/pathology-mode)

## MGH Care and Research Keep Student's Leukemia at Bay



Nick Cancelliere

It's been close to four years since Nick Cancelliere, then a college sophomore and avid snowboarder, found himself too exhausted to make a second run down the slopes of Killington, Vermont. Later that unforgettable day at Massachusetts General Hospital, testing revealed that Nick had a highly aggressive form of acute myeloid leukemia (AML), a cancer of the blood and bone marrow.

Karen Ballen, MD, clinical director of Mass General's Leukemia Program, was soon involved. It turned out that Nick is among the one-third of AML patients who have the FLT3 gene, a genetic feature that makes his AML aggressive and potentially fatal.

Nick was fortunate that the Mass General Cancer Center is a national leader in discovering new gene targets and the drugs that may stop their cancer-causing actions. Mass General oncologist Yi-Bin Chen, MD, was conducting a clinical trial of a drug called sorafenib that targets the FLT3 gene. Dr. Ballen presented Nick with the option to try it to help fight his leukemia.

For the past two years, Nick has been taking two pills of sorafenib a day. The drug is tough on the stomach and gastrointestinal system, but he says it's worth it.

"Our job is to get the best possible outcomes for our patients and there is nothing as personally rewarding as that," Dr. Ballen says. "We want to design more of these trials and bring to fruition more therapeutic options for patients like Nick to give them a second chance at life."

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